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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/038,162	01/02/2002	Doron Orenstien	42390P10918	7820
8791	7590	07/13/2005	EXAMINER	
BLAKELY SOKOLOFF TAYLOR & ZAFMAN 12400 WILSHIRE BOULEVARD SEVENTH FLOOR LOS ANGELES, CA 90025-1030			LAU, TUNG S	
			ART UNIT	PAPER NUMBER
			2863	
DATE MAILED: 07/13/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/038,162	ORENSTIEN ET AL.
	Examiner Tung S. Lau	Art Unit 2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 01 July 2005.

2a)  This action is **FINAL**.                    2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)  Claim(s) 28-46 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5)  Claim(s) \_\_\_\_\_ is/are allowed.  
6)  Claim(s) 28-46 is/are rejected.  
7)  Claim(s) \_\_\_\_\_ is/are objected to.  
8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All    b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_  
4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_  
5)  Notice of Informal Patent Application (PTO-152)  
6)  Other: \_\_\_\_\_

## DETAILED ACTION

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 28-46 are rejected under 35 U.S.C. 102(b) as being anticipated by Mittal et al. (U.S. Patent 5,719,800).

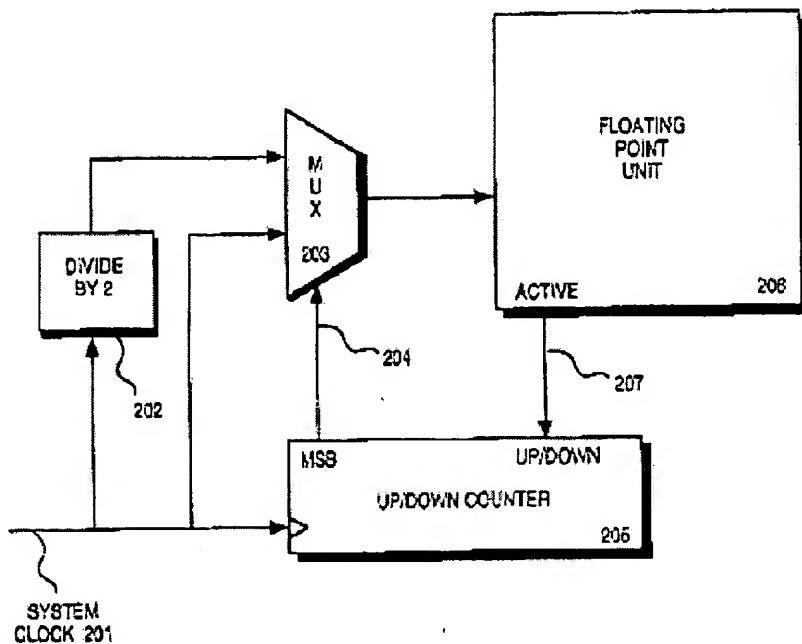
Regarding claim 28:

Mittal discloses an apparatus comprising: a first counter to count a number of times a first functional unit of the apparatus is activated (Col. 6, Lines 13-26, fig. 2, unit 205), a processing unit to apply a mathematical function to yield a deterministic estimate of an overall power consumption, the mathematical function to accept inputs including a value from the first counter (fig. 5, unit 500, , 506, Col. 6-7, Lines 27-19).

Regarding claim 35:

Mittal discloses a method comprising: counting a number of times a first functional unit of an integrated circuit is activated (Col. 6, Lines 13-26) and applying a mathematical function to generate a deterministic estimate of an

overall power utilization of the integrated circuit (Col. 6-7, Lines 27-19), the mathematical function accepting as an input the number of times the first functional unit was activated (Col. 6-7, Lines 13-19, fig. 3, unit 260, 220, 4, unit 230, 236, 5, 6).

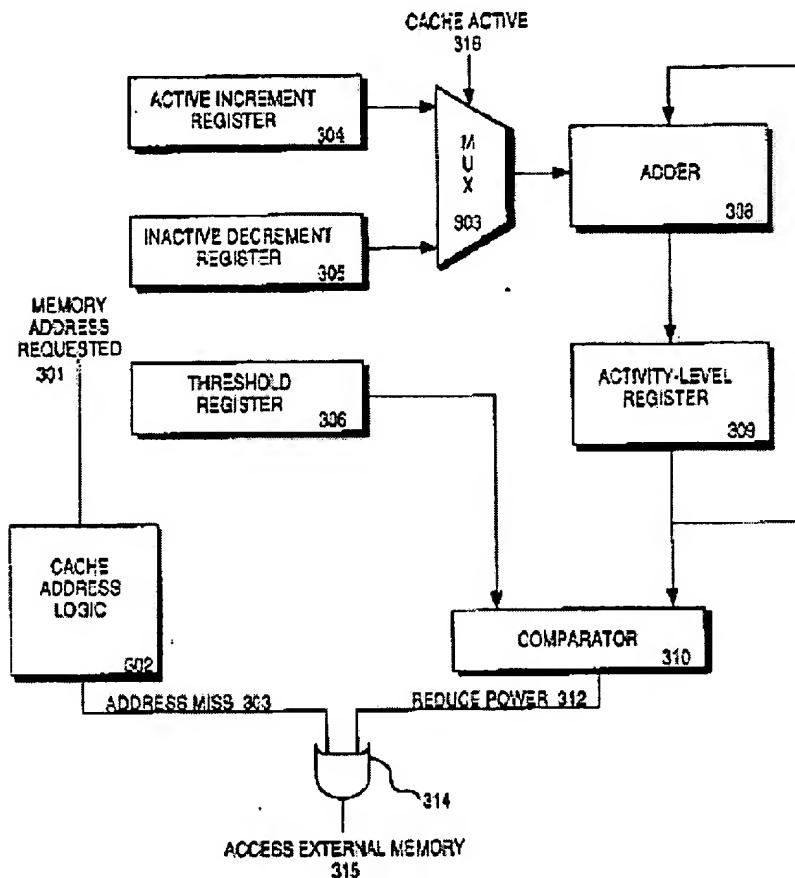


**FIG. 2**

Regarding claim 41:

Mittal discloses a machine-readable medium containing instructions that, when executed by a machine, cause the machine to perform operations comprising: counting a number of times a first functional unit of the machine is activated (Col. 6, Lines 12-26), and applying a mathematical function to generate a deterministic

estimate of an overall power utilization of the machine (Col. 6-7, Lines 27-19) the mathematical function accepting as an input the number of times the first functional unit was activated (Col. 6-7, Lines 13-18).



**FIG. 3**

Regarding claim 29, Mittal further discloses a first weighting factor is associated with the first counter; a second counter having a second weighting factor is provided, the second counter to count a number of times a second functional unit

of the apparatus is activated', and the mathematical function accepts as additional inputs the first weighting factor, the second weighting factor and a value from the second counter (Col. 6-7, Lines 38-19, Col. 7-8, Lines 51-41); Regarding claim 30, Mittal further discloses as additional inputs an operating voltage level of the apparatus and a current clock frequency of the apparatus (fig. 2, unit 201); Regarding claim 31, Mittal further discloses at least one throttle to alter the overall power consumption of the apparatus, wherein the at least one throttle is activated if the deterministic estimate of an overall power consumption exceeds a first threshold power level (abstract, fig. 3, unit 401), and the at least one throttle is deactivated if the deterministic estimate of an overall power consumption falls below a second threshold power level (fig. 4, unit 403); Regarding claim 32, Mittal further discloses the first threshold power level and the second threshold power level are the same (fig. 4, unit 403); Regarding claims 33, 40, Mittal further discloses the first functional unit is one of a floating point unit, a cache unit (fig. 2, unit 206), and an instruction decoding unit (fig. 2, unit 202, 203); claim 34, Mittal further discloses the mathematical function accepts as an additional input at least one previous deterministic power consumption estimate (fig. 3, unit 308, Col. 6, Lines 38-19); Regarding claim 36, Mittal further discloses adjusting the number of times the first function unit was activated by a first scaling factor; counting a number of times a second functional unit of an integrated circuit is activated, adjusting the number of times the second

functional unit was activated by a second scaling factor, and supplying the adjusted number of times the second functional unit was activated as an additional input to the mathematical function (Col. 67, Lines 27-19, Col. 8, Lines 12-41, fig. 3, unit 304, 305); Regarding claims 37, Mittal further discloses supplying an operating voltage level and a current clock frequency of the integrated circuit as additional inputs to the mathematical function (Col. 1, Lines 35-45, Col. 3, Lines 36-45); ); Regarding claim 38, Mittal further discloses reducing the operating voltage level of the integrated circuit if the estimate of the overall power utilization exceeds a first threshold, and increasing the operating voltage level of the integrated circuit if the estimate of the overall power utilization falls below a second threshold (Col. 1, Lines 35-45, Col. 3, Lines 36-45, fig. 3, unit 304, 305, 306, 310); Regarding claim 39, Mittal further discloses reducing the clock frequency of the integrated circuit if the estimate of the overall power utilization exceeds a first threshold, and increasing the clock frequency of the integrated circuit if the estimate of the overall power utilization falls below a second threshold (Col. 1, Lines 35-45, Col. 3, Lines 36-45, fig. 3, unit 304, 305, 306, 310).

Regarding claim 42, Mittal further discloses adjusting the number of times the first function unit was activated by a first scaling factor; counting a number of times a second functional unit of the machine is activated; adjusting the number of times the second functional unit of the machine was activated by a second

weighting factor; and incorporating the adjusted number of times the second functional unit was activated into the estimate of the overall power utilization (fig. 4, unit 308, 309, 310, 312, 314, Col. 1, Lines 36-45); Regarding claim 43, Mittal further discloses incorporating an operating voltage level of the machine and a current clock frequency of the machine into the estimate of the overall power utilization (Col. 1, Lines 28-67, Col. 3, Lines 4-45); Regarding claim 44, Mittal further discloses averaging power (Col. 3, Lines 4-35); Regarding claim 45, Mittal further discloses Reduce/ increase voltage level compare to voltage threshold (fig. 4, unit 306, 310, abstract, Col. 1, Lines 35-45); Regarding claim 46, Mittal further discloses reduce /increase clock frequency (Col. 1, Lines 28- 67).

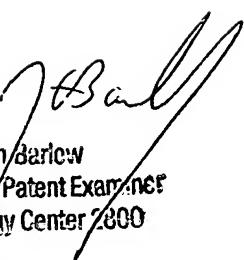
***Response to Arguments***

3. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection. However, applicant's arguments filed 12/28/2004 have been fully considered but they are not persuasive.
  - A. Applicant argues that the prior art does not show the 'machine-readable medium containing instructions to perform the estimation'. Mittal discloses 'machine-readable medium containing instructions to perform the estimation' in abstract and fig. 3, unit 316, 308, 309, 314, Col. 1, Lines 35-45.
  - B. Applicant continues to argue that the prior art does not show the 'counting the number of times various functional units are activated', Mittal discloses 'counting the number of times various functional units are activated' in Col. 6, Lines 12-26.

C. Applicant continues to argue that the prior art does not show the 'mathematical function to generate a deterministic estimate of an overall power utilization of the machine'. Mittal discloses 'mathematical function to generate a deterministic estimate of an overall power utilization of the machine' in Col. 6-8, Lines 27-25. In fact Mittal invention is to control the power consumption of an IC using mathematical function to generate a deterministic estimate of an overall power utilization of the machine, see abstract and again in Col. 2-3, Lines 65-45, Col. 5-8, Lines 13-59.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung S Lau whose telephone number is 571-272-2274. The examiner can normally be reached on M-F 9-5:30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 571-272-2269. The fax phone numbers for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TL



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